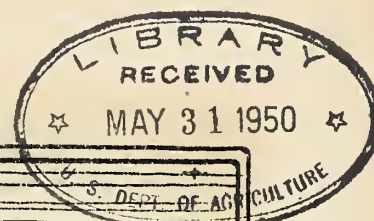


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Vol. 2, No. 6

June - 1937

WHAT DOES TREE PLANTING COST?

We have so far been talking almost exclusively in terms of cost per thousand trees planted, or per acre of plantation produced, and for the purpose of measuring operating efficiency that is probably the simplest basis for computation. But it is the poorest of all grounds upon which to sell the farm forestry program. If you tell John Citizen that you hope in time to reduce the cost of establishing an acre of plantation to \$30, he will still think of all the things he could do to an acre of ground for \$30. It's like looking through the wrong end of a telescope. Reverse the telescope and you get the following picture:

All available evidence points to the conclusion that $8\frac{1}{2}$ acres of shelterbelts properly arranged will give adequate protection against wind erosion to the average 160-acre farm. Being prudent, let us pick a figure per acre of plantation somewhere between what it has cost in the past and what we think it can be done for in the future - say \$38. That sounds like a lot of money until you discover that it represents only some two dollars per acre of farm land benefited. If the farmer contributes half the cost, as we expect, the Government will have a dollar an acre invested in the protection of this land, and the farmer slightly more because he is also furnishing the land occupied by the trees. Incidentally, he will recover his investment in the form of timber products and benefits other than protection against wind erosion, but let that pass.

The point, then, is not whether \$38 is too much to pay for the production of an acre of timberland, but whether the Government can afford to pay a dollar an acre to keep "the bread basket of the Nation" functioning as a bread basket, and the farmer a dollar an acre to insure his land against destruction by wind erosion.

Already many millions of dollars' worth of national wealth and private investments have ridden gaily away on the west wind, never to return, and we have seen only the beginning of it. It would seem to be only the part of plain business sense to buy some of this ridiculously cheap insurance against further loss.

- E.L.Perry, R.O.

LARGER STOCK SHOWS BETTER RESULTS

The annual report of the Lake States Forest Experiment Station has the following to say about the relationship of stock sizes to survival and growth:

"Further corroboration that larger stock is capable of withstanding both heat and drought is furnished by experiments conducted at Mangum, Oklahoma. In 1935 and 1936 the Lake States Forest Experiment Station made a test using over 20,000 seedlings of 14 different species of hardwoods graded into various size classes, using caliper (diameter of the stem) at a point two inches above the ground line and height of top as a basis of measurement.

"The year 1936 provided a severe test of the stock, since rainfall for the first eight months of the year was only 26 percent of normal and on November 1, at which time survival counts were made, was still only 55 percent of normal. The results of the plantings made between December 1935 and February 1936 brought out the following points:

1. Survival varied directly in proportion to caliper of the stock. Fairly large stock of about 1/4-inch caliper gave best survival; small stock gave poor survival.
2. The seedlings on the basis of survival were grouped into three classes and generally showed survivals as follows: Premium grades, 75 to 99 percent; marginal grades, 40 to 75 percent; culls, 5 to 40 percent.
3. For most species trees under 4/32-inch caliper are culls; those of 5/32-inch and 6/32-inch caliper are marginal; trees above 6/32-inch caliper and up to 16/32-inch caliper are premium grade. The use of larger than 16/32-inch gave good survival but materially increased planting cost.
4. Expressed on a basis of total green weight in ounces per seedling, culls are trees weighing under 0.2 ounce; marginal grades weigh between 0.2 and 0.5 ounce; premium grades weigh 0.5 ounce or over.
5. Small trees of species that grow slowly in the nursery gave better survival than small trees of fast-growing, succulent species.
6. Good-sized stock was less subject to blowing out and drought loss on sandy knolls.
7. The premium grades showed almost twice as much height at the end of the first field growing season. For instance, the large grades of black locust averaged 50 inches while the small grades averaged 29 inches.
8. The larger reserve of stored food in the premium grades aids in rapid establishment of their root systems, thus making them less subject to midsummer drought than small seedlings. Examinations of root systems of the trees at the end of the first growing season showed that the larger planting stock had a wider and often deeper root system.
9. Top-root ratio on a green-weight basis has little, if any, relation to field survival of deciduous stock planted in the Great Plains. In fact, the larger grades, which gave the best survival, had the poorest top-root ratio, while the smaller grades, which survived poorly, had the best top-root ratio.

10. The survival data, when interpreted in terms of nursery production, indicated that densities of 4 to 12 seedlings per lineal foot of row, with an inter-row space of 18 to 24 inches, gave the maximum number of premium-grade seedlings."

PRESIDENT'S ACCEPTANCE SPEECH

Accepting the Flagg painting yesterday President Roosevelt said, "More than 30 years ago Theodore Roosevelt began a great battle which I have been proud to renew, the battle to conserve and rebuild our natural resources. America's forests are at last getting the care and the opportunity for renewal which they demand and which we depend upon. But the great enemy of our forests now is fire -- fire that is started, nine times out of ten, by the carelessness of man. Carelessness can be prevented, and it is to that end that James Montgomery Flagg has painted and presented to the Nation this vivid picture. I hope all who visit the National Forests will see it, for I am sure that having seen it, they will remember it. It is with deep gratitude that I accept this painting on behalf of the United States Government."

- Washington Office Information Digest

SEEING IS BELIEVING

Mr. B. Burke stepped into this office the other day after being contacted the second time in regard to furnishing fencing materials for the tree strip planted on his farm. He is an absentee landowner and had just finished looking at the trees planted on his farm.

His first statement was that the Government must be trying to swindle him because they had planted such small trees that he would be dead and gone long before they were large enough to do any good. In plain language, he did not think the trees were worth fencing.

I asked him if he had about half an hour to spare and if he would care to take a trip into the country to see a strip planted just two years ago. He agreed to go out and look the strip over. We repaired to the Ed Logue strip and after taking one look he said he would be able to have the fencing material on his strip the next afternoon.

This is just another example that proves visual education is by far our most powerful sales attack. Our negotiation job is going to be greatly simplified when we are able to show our prospects results on the ground.

- Robert A. Dellberg, Kansas

THE VAGABOND FENCE

Building fence on the farm calls back memories of painful jabs from the barbs, ventilated trousers, and a rainy-day job about which very little poetry has been written. One can go and build a mile of fence in double-quick time if he has new wire, steel posts, few corners, and if the weather is not too hot; but what about building fence under shelterbelt conditions, using everything from discarded bedsteads to bridge piling?

This fence could be truly called the vagabond fence--it has two wires, it has six wires, it has hog wire, it has bailing wire, it has bright shiny new wire; its gates are few or they are many, corners are missing or they are frequent; sometimes its posts are salvaged from the bean patch, sometimes the

posts which were too crooked for ox yokes hold the minimum of two wires in place. This fence may be built adjoining the city park or it may lie at the end of two hours' travel from headquarters; the post holes may fill with quicksand or they may need to be blasted from hard pan; the fence must be straight; the wires must be tight, and the posts must be not more than 20 feet apart.

This vagabond fence may be built by the men from District One or from District Six; they may be white or they may be black; they may be feeble and old, or they may be spry and young; they may work in the duststorms or when the weather is hot; they may return at night tired and weary; they may come back wet from perspiration or rain; they may love their job or they may call on Allah to sustain them; but at the end of the day the fence is finished and another eight hours has been added to the monthly allotment.

The cost of the vagabond fence has always been a matter of conjecture, speculation and loud argument, until during May it was thought best to reduce it to a firmer foundation that would bear the heavy structure of June estimates. It was found that for every mile of new fence constructed, it is necessary to rebuild three fourths of a mile of old fence which takes 2.5 man days per mile to make it stand up.

To build 89.42 miles of new fence, it required 981.36 man days, or it took 10.97 man days to build one mile of new fence. This does not establish for all time the standard for Kansas fence building - it is not a record to be proud of nor one to be ashamed of - but it shows where the first bullet struck the target, gives us a basis for estimates, and furnishes a measuring stick for our strawbosses.

- W. G. Baxter, Kansas

GENERAL FEDERATION OF WOMEN'S CLUBS ADOPTS FORESTRY RESOLUTION

The General Federation of Women's Clubs which convened to the tune of several thousand members in Tulsa, Oklahoma last month, and which was addressed by Mr. Tinker of the Washington Office, adopted the following resolution:

"Whereas, the General Federation of Women's Clubs has for many years been keenly alive to the necessity for conservation of natural resources and has believed the development of forestry in the United States imperative to the esthetic and economic life of the Nation, and

"Whereas, the importance of conservation of natural resources should be made known to every school child, therefore be it

"RESOLVED, That the General Federation of Women's Clubs in Council meeting assembled, April 1937, reaffirm its stand in maintaining national forestry standards and support a comprehensive Federal Forestry program embracing the following points:

1. Continuance of its research programs in the fields of forestry management, range investigation, forest products, forest survey, flood control and forest influences:

2. Aid in the development of farm forests, reforestation, and acquire such submarginal lands as do not warrant private ownership:

3. Development of recreational resources of all national forest lands; and be it further

"RESOLVED, That the General Federation of Women's Clubs advocate a program of Conservation in each State which will encourage the teaching of Conservation of Natural Resources in its schools."

NIGHT CULTIVATION

Ever since we have had tractors it has been the practice of the Forest Service to run them for 16 hours a day on cultivation. With a heavy increase in mileage and no additional tractors, it was deemed a worthy experiment to attempt 24-hour service. A generator and lamps were borrowed from the Soil Conservation Service here at Elk City. The lights worked to perfection. The trees are easily distinguished by light and as far as I can determine just as effective cultivation can be performed by lights as in the daytime.

The lights were installed on a Moline tractor as follows: A headlight from an automobile was installed in front by bolting to the bracket holding the oil bath and one was installed on the front lower part of the right fender. These two lamps give light for road travel and row cultivation. A spotlight is located on top of the right fender. It can be used as an additional light for row cultivation as well as giving light anywhere on the tractor that light is needed. The tool box was removed from its hinges and placed on top of the left fender; a battery was installed where the tool box was sitting. The generator was installed directly over the power takeoff. A "V" shaped pulley was put on the power takeoff shaft, and an ordinary fan belt was put on the generator. This generates sufficient current to support the lights.

The tractor was observed by Mr. D. S. Olson, Chief of Timber Management, Regional Office; John R. Nelson, Acting State Director of Oklahoma; W. E. Webb, Acting State Director of Texas; and Howard Carleton, Jr., Shelterbelt Assistant of Mangum, Oklahoma. The cultivation was pronounced satisfactory.

- James W. Kyle, Oklahoma

NEBRASKA COUNTY AGENT INFORMS FARMERS OF TREE-PLANTING PROGRAMS

County Agricultural Agent Nat Tolman sent out the following letter to farmers in Box Butte County, Nebraska, according to "The Extension Forester":

"Trees will grow in Box Butte County if the proper species are planted and the area given regular cultivation. If every farm had a good windbreak around the buildings and a strip of trees along the north side of the place, wind damage, including surface evaporation of moisture and soil blowing, would be noticeably reduced. It is something we should seriously consider.

"Your farm bureau is emphasizing tree planting this year and as a part of this program has arranged for the planting of 100 miles of field shelterbelts in this county. The only cost to the farmer will be the land, its preparation, and material to fence the area. The U. S. Forest Service will furnish and plant the trees, construct the fence, and cultivate the planting until June 30.

"Trees for planting farmstead windbreaks and woodlots can be secured for the cost of digging, packing, and shipping under the terms of the Clarke-

McNary Act. This project has been in operation in this county for several years, and the above picture shows some of the results.

"Applications for trees under either of the above-described projects are available in the farm bureau office on the second floor of the Post Office Building. I will be very glad to discuss the details of this program with you at any time."

ALL RIGHT - BUT NO HITTING IN THE CLINCHES!

We note in the May issue of PLAINS FORESTER that Oklahoma lays claim to the first seed production in the shelterbelt strips. Texas has no desire to start a feud with Oklahoma, but we refuse to let any such statement go unchallenged. Several of the 1936 strips in Texas had desert willow and tamarix which bore seed last fall, the same season they were planted. But we are prepared to offer a better "Believe It or Not" story than that. The P. N. Durham strip south of Chillicothe was planted in 1936. At one point this strip, which is located on sandy soil, ran through a swale, or low place. The other day an examination of this low strip revealed that tamarix planted in the shrub rows in 1936 had not only produced seed, but these seed had fallen in the moist sand and had grown so that we now have a stand of practically 100,000 tamarix seedlings on our own strip, which will be available for use on other strips next fall. We challenge any other State to beat this record.

- W. E. Webb, Texas

REAL EDUCATIONAL WORK

Recently Ralph Johnston, in charge of the Kinsley District in Kansas, put on a cultivation training meeting for some of his cooperators. About 30 of the strip owners, the County Agent, and Mr. Johnston made a tour of seven farms in the area where the owners demonstrated their ideas of proper cultivation with various kinds of equipment. At the end of the tour and conference, the following conclusions were drawn:

1. Trees respond in accordance with the amount and kind of cultivation and care given them by the cooperator.

2. Strips attended by cooperators get better care on the whole than those the Government cares for, and such trees have in general made better growth. Cooperators are in better position to give the trees the necessary care at the proper time, and it is profitable for them to do so, since they will receive earlier and better protection from their plantations.

3. The double cultivation demonstrated with the Minneapolis Moline equipment eliminates hoeing, and similar results can be achieved with tools manufactured from obsolete machinery on most farms. The new equipment bought by some cooperators does excellent work, but it is not necessary to go to a great deal of expense for equipment for this small acreage.

4. Single- and double-row listing between the rows alone, will not qualify for ACP payments. It is necessary to keep the tree rows clean also.

5. Cultivating the tree row clean and leaving the centers of the row weedy is all right for protection against blowing on sandy strips, but deep listing will give as much or more protection and preserve the moisture as well.

6. Cletrac and cultivator attachment is an ideal piece of machinery for the sandy areas, and leaves the ground well protected.

7. The Russell Parker strip, an outstanding example of growth and thriftiness, has nothing to distinguish it from other strips in the region except superior cultivation and care.

8. The meeting was highly beneficial and interesting to both co-operators and officials, and more of them should be arranged.

CANADIAN SHELTERBELTS

Mr. R. C. Singleton of Vancouver, B. C., recently sent the Washington Office a manuscript article dealing with his experiences in shelterbelt planting in Canada. The article is interesting in that it bears out the claims that we have been making for shelterbelts, and shows that the idea of planting trees for protective purposes is widespread. Space does not permit publishing the entire article, but following are some highlights from it:

"The short crops and low prices of the past few years would completely discourage a less hardy people than prairie folk. Season after season they have sown with a magnificent courage only to have drought and winds ruin their crops.

"Fortunately there is a solution for this problem which is simple. Prairie farmers can lessen damage within a short time and ultimately completely prevent wind damage. Each farmer can protect himself without regard to his neighbors, but if everyone in the neighborhood will take the same steps, the individual measures for protection can be reduced.

"The following plan was worked out on my own farm in Saskatchewan and is applicable to all the prairie country. The suggestion is for each farmer to devote one day per year per quarter section to planting trees crosswise of the prevailing winds.

"Tree belts prevent the blowing out of crops; they reduce evaporation, thereby increasing yields; and they make possible a more balanced and safer type of agriculture; and, very important, they add immeasurably to the beauty and comfort of the farm. Trees prevent crops from being blown out for as much as 50 feet for every foot in height of shelter.

"Even though the soil may not drift nor crops be blown out, a windbreak will reduce evaporation. Housewives know that if they hang out the wash on a windy day, the clothes in the wind will dry more quickly than those clothes which may be behind the building out of the wind. One farmer with an 8-foot caragana hedge protection on 100 acres had a crop of 16 bushels per acre in a dry year, while his neighbors without protection had from nothing to five bushels. In the dry season of 1934, an Alberta farmer with shelterbelts cut his alfalfa three times, while his neighbors without protection cut only once.

"I quote from a letter received from Mr. Ross some time ago:

"Referring to an interview in which I indicated that land protected with caragana produced 45 bushels per acre, while

adjoining land blew out completely. As a matter of fact, this occurred at our nursery station at Sutherland soon after we established it and before the hedges had made very much headway. The crop concerned was oats. About 50 acres were put in on summer fallow in one block, 25 acres had no protection whatever, while the adjoining 25 acres was divided up by newly planted caragana hedges which were not more than two or three feet in height. The unprotected portion of this planting blew out completely as indicated, while the protected portion produced 45 bushels and, in fact, was about the only reasonably good crop in the district that season.'

"Trees add enormously to the selling price of land, as any realty man knows. An Eastern couple came to the prairie to buy a farm, and were shown good farms at from forty to fifty dollars per acre, but none of them seemed to please the couple. Finally they were shown a farm at seventy-five dollars an acre on which was a fine grove of trees. This reminded them of home, and they bought it. The original cost of planting the trees had been trivial, yet they brought the owner an extra twenty-five dollars per acre.

"Trees of some kind will grow wherever wheat will grow. Land which will not grow some kind of shelterbelt material is not worth farming. On my own farm we have had three practical crop failures in succession, yet caragana, ash, and Manitoba maple which we planted in the Spring of 1935, did well.

"Trees which I planted on non-irrigated land in a region of California where the rainfall is about eight inches, were alive when I saw them in 1928. I know of no safe wheat district where precipitation is as little as eight inches. Fruit trees which I planted in 1921 on non-irrigated land in California where the rainfall is perhaps 12 inches, were flourishing when I saw them in 1925."

IN THE SPRING A YOUNG MAN'S FANCY TURNS TO PICKIN' CHINESE ELM

Some observations of this year's seed collection of Chinese Elm may be worth recording. The earliest safe day to pick any seed is most important. If collected too green, it may provide worthless seed to be followed by more wasted money in the nursery, and it may even destroy the source of good seed for replacing the original poor material.

There is a point in the age of Chinese Elm seed, where the chlorophyll begins to disappear and the gray appearance replaces the green, that is the earliest logical date for collection. This change of color begins on the wing margin and advances toward the center. It begins to look like hay instead of grass. At this age, the kernel is solid and will shrink only slightly, if any, after being picked.

As one begins to see such change appear on the first trees, it is advisable to pick a handful of seed each day and allow to dry 24 hours. If considerable shrinkage has not appeared in that period, it is time to pick seeds like fighting fire, for from four to six days will be your time limit.

The first seeds to ripen are the unfilled ones on good trees, or entire trees of low quality seed. It is usually a good plan to watch the seed that is blowing off. As long as flat seed is all that is being lost, the quality of seed is being improved.

Another barometer to observe, both in Kansas and Nebraska, is the first appearance of Spirea (van houttei) flowers; then, Chinese elm seed is ready to pick. With the Spirea coming into full bloom, the seed is either collected or lost. I am in favor of substituting some bridal wreath for lilac in our strips so future Chinese elm seed collectors will not have to climb a tree to determine when to start collection.

The first few days after seed has been collected, it should be thoroughly stirred and dried on a floor or tarp in good circulation of air.

- Harry P. Rigdon, Kansas

FLOYD COUNTY FARMER DEMONSTRATES VALUE OF TREE PROTECTION

On May 27, 1937 three Forest Service Officials visited the farm of Mr. Smith Purdy near Flomot, Texas. Mr. Purdy is one of the leading fruit producers in this section of the State and has a fine orchard of peaches, pears and apricots and in addition has a very good producing vineyard. In a section of the county that has a very sandy soil, and surrounded on all sides by evidence of severe blowing and drifting, Mr. Purdy's farmstead was a remarkable contrast to others in that vicinity. While other farmsteads had five- to eight-foot drifts of shifting sand in their yards and around their buildings, Mr. Purdy stated that even small washers or bolts could be left on the ground near his buildings with no danger of being covered by sand.

Every tree, shrub and vine on the place has been planted and cared for by Mr. Purdy. A grove of cottonwoods north of his buildings came from cuttings made in the nearby river bottom about 20 years ago and carried tied to his saddle to the place where they now stand. In talking about the crop protection furnished by these trees, Mr. Purdy stated that in the hot, dry summer of 1935 he had cotton planted in the field north of this grove. The difference in appearance of that portion of the crop protected from hot south winds was so great that Mr. Purdy and some of his neighbors checked the yield obtained. According to his statement, for a distance of approximately 20 times the height of these trees, the yield was 1/2 bale to the acre. Beyond this distance and in that part of the field which extended beyond the trees, the cotton yield was only one bale to six acres. This meant a three-fold increase which Mr. Purdy credits entirely to the protection of the trees. He also stated that in his opinion a farmer would be better off to have 1/2 of his land in trees than to risk the soil blowing and crop losses he now experiences. "If every farm in this vicinity was cut up into 20-acre fields surrounded by trees, there would be many less failures and abandoned farms."

- W. E. Webb, Texas

RODENT CONTROL IN KANSAS

Rodent control during February, March and April has closely approached a fifty-fifty cooperative basis between the farmers and the Biological Survey under the system we are now using. During the month of April individual farmers contributed approximately sixty-five percent of the work. It is expected that the months of May and June will show about the same amount of cooperation.

The present system of rodent control is basically working out all right in Kansas. We are supplementing the poisoning work by starting a group of farmers, organized into a "Hunt Club," who will hunt on a limited scale around the plantings in their territory. This method requires us to furnish one shotgun shell for each pair of rabbit ears turned in, but gives us 100 percent

efficiency for the ammunition expended. We expect it to aid in stirring up interest among the strip owners and to result in more effective cooperation in the protection of tree strips. So far, this plan shows possibilities here, and is apparently working out well in Nebraska. If it works out as well as expected, we should like to expand it next year. In such case, we will need funds to purchase ammunition to carry out the method. I believe money invested in this sort of cooperation is well worth the expenditure when carried on in heavily infested territory.

We would also like to plan on a number of cooperative rabbit drives next winter if it is possible to purchase sufficient fence material for the necessary corral and wings. This type of work will probably incorporate the cooperation of organizations such as rifle clubs, the American Legion, and 4-H Clubs.

- Frank W. Sampson, Biological Survey

BETTER STOCK, BETTER SURVIVAL

For several years the Lake States Forest Experiment Station has been urging the superiority of the larger sizes of planting stock, says the Region 9 "Daily Contact." With the passing of each field season, more evidence is accumulated to show the advantages of planting large stock. This year the data come from the Lake States Region proper and from the Plains States.

Results of the long-time planting experiments on the Huron plainly indicate that the trees which were larger at the time of planting withstood the worst drought year on record in the locality better than the smaller trees. To cite one example among many, Norway pine planted in the Fall of 1935 shows the following survival percentages:

1-0 stock	- 5%
2-0 stock	- 14%
1-1 stock	- 18%
2-1 stock	- 38%
2-2 stock	- 59%

Age classes are primarily an expression of size classes so, while our deciduous planting stock is practically all 1-0, the same principle largely holds true; the larger and sturdier plants of Grade-1 stock survive adverse growing conditions which are apt to kill off the weaklings that compose the lower grades. To what extent it is economical to attempt to salvage the investment in sub-grade stock through the selection of particularly advantageous planting sites and other practices is not yet definitely known, but it is certain that indiscriminate planting of sub-grade stock results in heavy losses.

- D. S. Olson, R.O.

MAYBE IT ISN'T NECESSITY THAT IS "THE MOTHER OF INVENTION"

My first introduction to Kiowa County created an impression that the northern half was a part of the Sahara Desert that had been misplaced, but in traveling southward I was astonished to see a prosperous fertile country that would compare favorably with any rich agricultural district, populated largely by Mennonites. I was also impressed with the fact that the people of Kiowa County were somewhat odd and my impressions were verified later when I met one "Canned Heat" Jennings, a resident of the sand hills whose living room was the body of a Model T Sedan, his kitchen an Essex Sedan body, and his bedroom or boudoir the body of another Model T Sedan.

I was thoroughly convinced that the people were more than just a little queer one morning when I learned that one of them had received a call from above, climbed atop his windmill, flapped his arms and announced, "Boys, I'm going to heaven!" And he nearly got there in a roundabout way. But for the untiring efforts of a good physician and the faithful care of his family for three weeks, he would without doubt now be contentedly thumbing his harp with the other haloed gentlemen.

Thus I was all prepared to see most anything on a recent cultivation inspection of those who had signed up for ACP payments in the sand-hill district, and I was not at all disappointed. The people of Kiowa County must also be a people of genius judging from the different types of home-made cultivation equipment that I found. There were double-shovel cultivators attached to corn cultivators, new types of disks, spring-toothed cultivators, and what-not, known only to the individual whose fertile brain conceived each design. One of the most original pieces of machinery, and incidentally one of the tools doing the most efficient job of cultivation, was an antiquated type of wheat drill with the disks removed and cultivator shovels attached. This machine not only cleans the weeds but leaves the ground rough enough to prevent it from blowing.

As I listened to each man telling of his method of controlling the weed growth and wind erosion and of his plans for caring for his strip in the future, I marvelled at the growing interest and enthusiasm of cooperators who in the past have been slow to cooperate and quick to complain.

I now wish to humble myself in apologies for having ever suspicioned that the people of the Kiowa County sand hills were odd or even a little queer. The people of the sand-hill district are not only progressive, but possessed of true genius. After all, maybe all geniuses are more or less "pixilated."

- Ralph V. Johnston, Kansas

TOWARD A MORE PICTURESQUE SPEECH or GEMS FROM THE OPERA

The following were taken from quiz papers of freshman forestry students in General Forestry, collected by E. G. Cheyney:

" . . This was called a 'ban' forest. And that's what it meant, for if a serf got caught in it off ban his head or he was hung to the nearest tree . . "

" . . Teat wood . . "

" . . The western coast has an almost unmentionable bit of forest . . "

" . . Therefore, in inland places water is not pure but second-handed ."

" . . There are 500 species of the genies . . "

" . . The timber itself is not of much practical value because of the inconsistency of the wood . . . "

" . . The greater part of the usable forests in Brazil are located on the Atlas Mts. in the north end of Africa . . "

" . . They were stolen, swiped, cut and denuded by other countries . . "

" . . They will however continue to sexport cork . . "

" . . Italians and Greeks have slaughtered all available timber . . "

" . . The Feudal System, was land given by the emperor and he in turn given land to lower lords they all get this land in return for their services to his higher lord . . " (!)

" . . The forests above 5000' have not as yet been excavated . . "

" . . Example if a man cross another for so many year the owner doesn't object then the owner can't keep up a fence across the Path for it known as right of users . . " (This finally got me!)

" . . The trees Japan are of different gender . . "

" . . Brahmaputra is a river in India that flows from the Indian Ocean across India into the Himalaya Mts. . . "

" . . Monsoon is the place in Germany where a forest school is established . . "

" . . Monsoon is a river located in Southern India, used for drainage . . "

" . . Monsoon is a hard driving rain having lots of wind in it . . "

" . . Monsoon is the reforestation project in France . . "

" . . Monsoon is the time of the year when China has her heaviest rainfall . . "

" . . Rights of Usury . . "

" . . The Pheasants were given the right to pick up leaves, dead sticks, and debris for fuel and bedding . . "

" . . Conscious Reproduction is reproduction that is really given great thought and the need is felt for it and it is reproduction really done well . . "

NATIVE WESTERN YELLOW PINE IN CUSTER COUNTY, NEBRASKA

It is a little-known fact that there is a stand of native ponderosa pine in Custer County, Nebraska, at least 100 miles east of other stands of the same species. These trees are located in what is locally known as Pine Canyon, about 14 miles directly east of Arnold, Nebraska.

According to the older residents of this section of the county, there was at one time quite an extensive area covered by pine but it has now been reduced to a few hundred trees, and what trees remain are comparatively young, the oldest not exceeding 60 or 70 years in age.

The trees are growing in Colby very fine sand, broken phase, and are, as a whole, quite thrifty and show very little injury from the recent severe droughts. The pine is growing with eastern red cedar and shows less drought

injury than the latter. It is also noted that the pine extends farther up the slope than the red cedar and stands more competition from grasses.

The pine has made quite a rapid growth, the annual rings on a recently cut stump twelve inches in diameter being only 35 in number. Regeneration is evident, although few if any new trees have started during the recent drought years. The youngest trees observed are probably from eight to ten years of age.

The existence of this stand of native pine, located as it is at least 100 miles from any other stand of the same species, is of great interest and no ready explanation of its presence can be made.

Is it a remnant of a stringer of western ponderosa pine at one time extending far beyond the present accepted range of the species? Or was the stand started by the seed being carried in by some unknown agency?

The fact that three rivers and their drainage systems lie between this stand of pine and the nearest other native stand seems to indicate that the seed could not have been carried in by water, and considering the kind of seed that ponderosa pine bears, it seems improbable that the seed was scattered by birds or animals.

Since these methods of seed distribution are unlikely, it seems that the seed must have been carried in by wind or a human agency, or that the stand is a remnant of a forest that extended well into western Nebraska at some time in the past.

- Glenn R. Viehmeyer, Nebraska

WHO HAS THE FORESTS NOW?

To mention South Dakota and Minnesota in the same breath is to conjure up two pictures diametrically opposed in the matter of forests. Almost everyone knows South Dakota to be a huge expanse of treeless prairie, where the early settler lived in a sod house and burned buffalo chips for fuel; Minnesota is a land of impenetrable forests and hidden lakes, where the early denizens found the only practicable means of travel to be by canoe.

It comes as something of a shock then to find that in this year of our Lord, South Dakota has three billion board feet of standing saw timber, and that this is three-fourths as much as now remains in Minnesota.

FORESTERS HAVE DEVELOPED A REVERENCE FOR GRASS AKIN TO THAT FOR TREES

Secretary Wallace, in a broadcast over the Farm and Home Hour on May 18, said, "In the western country I have obtained my most interesting information about grasses and range management from the Forest Service, which has administered the grazing resource on the National Forests. In nearly all of the western States the foresters have developed a reverence for grasses which is akin to that which they hold for trees. They have seen with their own eyes the way in which overgrazing on unregulated lands has made it possible for sudden storms to cause mud flows down the mountain canyons, with millions of dollars of damage to the people in the valleys whose houses, barns, roads, and fertile soils are covered up."

- Washington Office Information Digest

THE WESTERN RANGE SURVEY

If it should be your desire to make an "x" on a map of the United States to indicate the spot where "the West begins" it would be well to start in North Dakota and proceed south through South Dakota, Nebraska, Kansas, Oklahoma and Texas, as the "x's" would follow an irregular course down through the middle of these States. To the west of this line there is a total of 975 million acres, of which approximately 728 million acres is range land.

It wasn't so many years ago that part of this area was called the Great American Desert. It was a barrier to the Forty-Niner. Early diaries and accounts describe it as a vast, trackless waste of rolling grassland, inhabited only by Indians and buffalo.

By 1880 the viewpoint had changed materially and the cattle boom was in progress. Cattle companies owning 100,000 head or more were not uncommon. Foreign capital was interested and several cattle companies were organized with a capitalization of more than a million dollars each. But now, overstocking of the range, unsuited land policy, speculation; all have left their mark in a badly depleted range land.

The Western Range Survey has set up as an objective:

"Ultimate: To determine the location, extent, type and composition of plant cover and grazing capacity, under uniform methods and procedure, for all range lands throughout the entire western range area, and jointly to interpret and present this information in a form that will lend itself most readily to the determination of essential management and betterment practices in the development and administration of conservation and adjustment program.

"Immediate: (a) To assemble and jointly analyze and interpret all usable data now available and that are to become available during the year, on the present condition and potential use, of western range lands, and to present the results on maps and by tabulations by counties, so that they may serve as a basis, and be readily available, for developing future action programs of the Agricultural Adjustment Administration and the other co-operating agencies; (b) To coordinate and round out, insofar as practicable, the range survey work of all cooperating agencies to assure uniformity in methods, procedure, analyses, and results, so that both data available from previous surveys and those to become available can be fitted into the general survey that will ultimately cover the entire range area."

Perhaps the objective might be stated in a broader manner--to make the West a better place to live; to provide social and economic security for its inhabitants. Millions of acres are suited only for the production of native grasses, and a sod cover is necessary to prevent wind and water erosion. Wildlife and recreation are increasingly important factors to consider.

The job is a family affair. The Forest Service, Soil Conservation Service, Agricultural Adjustment Administration, Resettlement Administration and various experiment stations are cooperating in the work, and funds have been pooled from the various agencies for this work. Four draftsmen have been under way almost a month preparing base maps for the Prairie States from State-Wide Planning Survey data. Soil Conservation Service field examiners are already in the field. The AAA-RCP 1937 data, as well as most of the 1936 data, will be incorporated in the Western Range Survey. Other regions, working on Western Range Survey, show various stages of progress.

- H. G. Peterson, R.O.

CATALPA GROVE MAKES MONEY

Mr. Rod Murray has supplied us with some information about a catalpa grove. This catalpa grove, one acre in extent, was cut over about nine years ago and the material (posts and poles) sold for \$450. We have looked over this catalpa grove recently, and it is now ready for another cutting. Assuming that he is going to be able to sell this cutting for the same amount, means an annual income of \$50 per acre per year. This plot is located on sandy land with high water table and this is, of course, the reason the trees have made the remarkable growth they have.

- Robert A. Dellberg, Kansas

WHAT'S WRONG WITH THIS STORY?

William Trygg, Personnel, stopped at several filling stations along the Lincoln highway in Illinois, Indiana and Ohio during a recent field trip. In several instances the attendants looked at the shield on his official car and asked, "What is this Forest Service anyway?"

- Region Nine "Daily Contact"

PASSENGERS ON STREAMLINER INTERESTED IN PRAIRIE STATES FORESTRY PROJECT

The Union Pacific stewardess on the streamliner "City of Denver" informed a Forest Officer that many patrons on the run between Denver and Chicago asked her questions on the origin, scope, and purpose of the President's tree-planting project in the Plains States. To assist her in answering these questions she has been sent the Forest Service publication "Possibilities of Shelterbelt Planting in the Plains Region."

- Washington Office Information Digest

RANGE PROGRAM IN NORTH DAKOTA

The training period for Range Examiners in North Dakota drew to a close on May 15, and 19 men went to their respective areas. The training work seems to have been fairly successful although some additional time could have been spent on mapping. There weren't enough examiners for one for each county and most of the boys are handling two and sometimes three counties. One of the Examiners resigned at the close of the training program to accept a place in Montana.

Applications are coming in rather slowly and at this date (June 17) there are 626 reapplications from 1936 covering 1,125,016 acres and 726 new applications covering 773,448 acres. At present about one-third of both the reapplications and the new ones have been completed and three counties are totally completed.

The Examiner for Sioux County had carried out two examinations when the county committee decided to withdraw from the Range Conservation Program for this year. This Examiner has also handed in his resignation. We now have 18 Examiners and three Inspector-Instructors in the field.

Altogether the future of the RCP in North Dakota does not seem too rosy and it seems doubtful that recovery will be made this year. Many ranchers have sold most of their stock or have moved them into other States for feeding during the summer months. In the southern tier of counties west of the river many operators have abandoned their holdings entirely and have moved to new areas; in many cases, new States. The major portion of those moving out are going to Washington and Oregon where they say they hear "there's rain out there."

- K. W. Taylor, North Dakota

NEBRASKA NOTES

A two-days' field meeting was held at Neligh May 27-28 at which all field personnel including Junior Foremen were present. While the conference was called chiefly to standardize cultivation methods, fencing and other activities were included in the program. Time at this meeting was about equally divided between the conference room and field trips to surrounding shelterbelts where cultivation units and fencing crews were at work.

Oklahoma may have her floods to destroy nursery stands, but Nebraska is still old-fashioned enough to get wind damage. On Saturday, June 5, the Regional Office begged with tears in its voice for all available surplus seed to be sent to Oklahoma for resowing the Noble Nursery. After much stammering and stuttering on our part the seed was expressed to Oklahoma on the evening train. Saturday night and all day Sunday a gale blew at Fremont and on Monday morning we found six acres of newly emerged Chinese elm, black locust and mulberry seedlings entirely destroyed, besides other stands of chokecherry and olive badly damaged. Fortunately, Kansas can come to our aid with mulberry seed, and we had a few pounds of Chinese elm seed hidden away, so we hope to yet secure a full stand of seedlings before hot weather puts a stop to sowing.

Farmer cooperators are cultivating approximately 5500 acres of the total of 7500 acres of shelterbelts which we have planted in Nebraska, at no expense to the Forest Service this year. Of the 2000 acres which are being cared for by the Forest Service, 350 acres are being hired cultivated on an acre basis, and 1650 acres are being cultivated with Forest Service equipment. We have found frequent personal contacts pay big dividends in securing proper cultivation at the right time. All strips have been cultivated one time and approximately 50% of them a second time at this date (June 8). All plantings will be cultivated at least two times prior to June 30. We find our biggest job is in getting farmers to set their machinery so as to cover woods in the tree rows. Only a few men are being employed in hoeing and then only to clean tree rows which were improperly cultivated the first time over.

KANSAS NOTES

The shelterbelt trees are looking fine in the St. John district after ten inches of rain falling at different intervals during the month of May. It seems now that the drought is broken. We grew trees through two terribly hot, dry, summers when the farmers were unable to grow corn and very little wheat. Everything was so dry that there was constant danger of fires. As Bob Burns says, "when we had meat and gravy for dinner we would eat the gravy first so if the house caught afire we could grab the meat and run."

It seems as if those days are over now. The future looks brighter. We can see in the not too far distant future, miles upon miles of shelterbelts scattered over what was but a few years ago the windswept plains.

Rabbits, this spring, have not done much damage where the farmers have put out poison. The method used by the Biological Survey for distributing the poison this year is working fine. However, there seems to be an extra lot of young grasshoppers and cutworms to do damage.

The County Agent of Stafford County is getting in a carload of sawdust to use in a poison mixture for the grasshoppers and cutworms.

The mixture will consist of 75 pounds sawdust, 25 pounds shorts, 3 ounces of amyl acetate, 1-1/2 gallons molasses and water. This mixture has been tried with good results.

The County Agent intends letting this out to the farmers at \$1.20 per hundred after being mixed. Two of our cooperators have already placed orders for some of the mixture for their shelterbelts.

- Glenn W. Spring, Kansas

During the last week in May, heavy rains fell over the entire planting area in Kansas and relieved the drought situation which was beginning to have its effects on tree survival. Dry weather during the early part of May allowed very effective cultivation and the work moved forward faster, as it was not necessary to take time out for rains. The seven tractor units have been operating continuously during daylight hours with two shifts each day.

Strip owners have been doing their part in keeping down the weeds the present season. The tree owners have had difficulty in finding the proper tool to cultivate the trees most effectually. It has been clearly demonstrated that a two-horse corn cultivator straddling the row is the most effective tool yet discovered to get the weeds out close up to the trees.

Farmers usually find it most convenient to work between the rows with a disc, a one way, a two-row lister, or a spring-tooth harrow; then each row is cultivated with a two-horse cultivator and the finished job is splendid. Where the cultivator is not used, it is necessary to hoe out a strip of weeds in each row, and this calls for labor we do not have.

On the Forest Service tractors, the most suitable equipment is to have the cultivation attachments mounted on a bar at the rear of the tractor and then have a two-horse cultivator in tandem formation close-hitched behind. With good ground preparation, a tandem cultivator arrangement does away with practically all hand hoeing. Hand hoeing is confined mainly to strips cultivated by co-operators who do not have a corn cultivator to take care of weeds in the row.

- W. G. Baxter, Kansas

OKLAHOMA NOTES

Two 1937 plantings were selected this spring to receive machine cultivation only. As a control, two strips were chosen on which both hand cultivation and machine cultivation are being done.

While it is yet too early to draw any definite conclusions, results obtained on these and other strips tend to indicate that it may be possible practically to eliminate hand cultivation, provided machine cultivation is done properly and in time. It is recognized that previous season ground cover and prior handling of the land have an important bearing on weed growth, and it is possible that on some sites a certain amount of hand cultivation will always be necessary.

Part 2(b) of our Cooperative Agreement with the landowner for a shelterbelt planting states that he will furnish material for constructing a fence "with posts not less than twenty (20) feet apart." This clause has been taken in the spirit in which it was meant, and to date we have not encountered a single landowner who has insisted that his posts be set 200 or more feet apart.

It is said that "honest confession is good for the soul." A farmer living across the road from one of our prize 1935 plantings confessed the other day that he watched the crew planting this strip and made the statement, "those little sticks will never grow." Since many of the trees in this strip have now reached a height of 15 feet or more, the incident illustrates once more that in these modern times a man who states that something "can't be done" is likely to be interrupted by somebody doing it.

Overheard by a planting foreman after putting a trainee through the four-step method of training to plant a tree properly: "All I needed to hold down that bridge job I just come frem was a 44 shirt and a number one hat. I believe there is something to this tree business."

R.O. GOSSIP

One Daniel Cupid has been engaged in a little promiscuous archery practice around these diggings since the last PLAINS FORESTER went to press. Bill Maynard and Grace Hilbert decided that the path of single blessedness was no longer so alluring, and took the fatal leap on June 6. The impetus of the leap carried them all the way to the mountains of Colorado, where no doubt they hoped to escape the felicitations of their fellow workers. But it was a vain hope. The rice and old shoes awaited them upon their return, as well as a really gorgeous wool blanket, the gift of the office personnel.

Amy Frantz resigned late in May, and a first-class detective would no doubt find a clue to the reason in the lovely diamond ring that suddenly made its appearance on her engagement finger. In fact, the reason seems to be so well established that the office girls gave her and Miss Hilbert a double shower at Lucille Clark's home. Each was told that the shower was for the other, and the girls profess to believe that the showerees were really surprised. This writer, being male and somewhat full of years and the fruits of observation, is frankly skeptical that any such momentous secret could have been kept by so many women for so long a time, but anyway a grand time was had by all and sundry. Miss Frantz, since she is headed for the West Coast, received gifts appropriate for traveling, but Miss Hilbert, who is settling down in our midst, received articles of a household nature. The rumor is unfounded, however, that each of the married ladies, drawing upon her own experience, presented the bride-elect with a good durable rolling pin of the old-fashioned woden variety.

From June 17 to 19 the State Directors met at the Regional Office, where Messrs. Tinker and Phillips of the Washington Office were in attendance. A dinner at the Cornhusker Hotel (male only, which, it turned out, was just as well) featured one evening of the meeting.

The conference developed into perhaps the best one that the Project has ever had. "Ted" Tinker, with his characteristic drive and twelve-cylinder vision, brought a breath of very welcome fresh air into the discussions. Reactionaryism (if that's a good word) vanishes like a snowbank in June in the presence of that hombre.

Messrs. Tinker and Roberts made a brief inspection tour of South Dakota and Nebraska before the conference, and together with Mr. Olson, are on a similar trip in the southern States at present. Mr. Phillips has been laid up in Lincoln because of a dental operation, but is now joining the party in Oklahoma.